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Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.  
Larsen

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January 1935

## Test 240: Caterpillar Model 50 (Diesel)

Tractor Museum

University of Nebraska-Lincoln, [TractorMuseumArchives@unl.edu](mailto:TractorMuseumArchives@unl.edu)

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UNIVERSITY OF NEBRASKA - AGRICULTURAL ENGINEERING DEPARTMENT  
AGRICULTURAL COLLEGE, LINCOLN

Copy of Report of Official Tractor Test No. 240

Dates of test: August 19 to 29, 1935.

Name and model of tractor: CATERPILLAR DIESEL FIFTY

Manufacturer: Caterpillar Tractor Co., Peoria, Ill.

Manufacturer's rating: 56 Drawbar Horsepower Maximum in 2nd gear (standard conditions)

## B R A K E   H O R S E   P O W E R   T E S T S

[illegible]

TESTS B AND C 100% MAXIMUM LOAD. TWO HOURS

61.04 : 850 : 4.139 : 14.75 : 0.474 : 0.000 : 0.000 : 0.000 : 161 : 60 : 28.940

TEST D RATED LOAD, ONE HOUR

54.30 : 851 : 3.813 : 14.24 : 0.491 : 0.000 : 0.000 : 0.000 : 161 : 61 : 28.955

TEST E \*VARYING LOAD. TWO HOURS

54.27	:	852	:	3.798	:	14.29	:	0.489	:	0.000	:	0.000	:	0.000	:	161	:	61:	0.000
0.70	:	943	:	1.498	:	0.47	:	14.957	:	0.000	:	0.000	:	0.000	:	157	:	60:	0.000
28.85	:	900	:	2.472	:	11.67	:	0.599	:	0.000	:	0.000	:	0.000	:	158	:	61:	0.000
59.88	:	840	:	4.279	:	13.99	:	0.499	:	0.000	:	0.000	:	0.000	:	160	:	61:	0.000
14.84	:	907	:	1.944	:	7.63	:	9.158	:	0.000	:	0.000	:	0.000	:	158	:	60:	0.000
41.59	:	874	:	3.137	:	13.26	:	0.527	:	0.000	:	0.000	:	0.000	:	159	:	62:	0.000
34.33	:	886	:	2.855	:	12.02	:	0.581	:	0.000	:	0.000	:	0.000	:	159	:	61:	28.955

\*20 minute runs. Last line is average for two hours.

## DRAWBAR HORSE POWER TESTS

	:	Draw	:	Speed	:	Crank	:	Slip	:	Fuel Consumption	:	Water:	Temp.	:
H. P.	:	bar	:	miles	:	shaft	:	on	:	H. P.	:	Lbs. used	:	: Barometer
	:	pull	:	per	:	speed	:	drive	:	Gal.: hour	:	per Gal. Cool*	:	Air: Inches of
	:	pounds	:	hour	:	R.P.M.	:	wheels	:	per per	:	H. P. per ing	:	: Mercury
	:		:		:	%	:	hour	:	Gal. : hour	:	hour: med.	:	:

TESTS F AND G MAXIMUM LOAD.

50.57	:13109	: 1.45	: 845	: 7.68	: Not Recorded	: 166	: 81	: 28.910
52.99	: 8268	: 2.40	: 850	: 1.92	: "	: 166	: 84	: 28.805
51.32	: 5745	: 3.35	: 850	: 1.32	: "	: 165	: 81	: 28.800
47.96	: 3877	: 4.64	: 850	: 0.99	: "	: 165	: 79	: 28.800

TEST H RATED LOAD. TEN HOURS Second GEAR.

42.32 : 6591 : 2.41 : 851 : 1.98 : 3.507 : 12.07 : 0.579 : 0.000 : 160 : 61 : 28.945

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BRIEF SPECIFICATIONS

MOTOR: Make Own Serial No. 5E7522 Type 4 cylinder, vertical diesel  
 Head I Mounting Crankshaft lengthwise  
 Bore and stroke: 5 3/4" x 8" Rated R. P. M. 850  
 Port Diam. Valves: Inlet 2 1/16" Exhaust 2 1/16"  
 Belt pulley: Diam. 13 3/8" Face 10" R. P. M. 752  
 Fuel System: Own  
 Governor: Own No. None Type Centrifugal  
 Air Cleaner: Donaldson Type Combination oil and wire screen labyrinth  
 Lubrication: Pressure

CHASSIS: Type Track layer Serial No. 5E7522 Drive enclosed gear  
 Clutch: Own Type Single plate - dry Operated by hand  
 Advertised speeds, miles per hour: First 1.6 Second 2.4  
 Third 3.4 Fourth 4.7 Reverse 1.9  
 Measured length of track 21.9113 feet Face 18"  
 Lugs: Type Cleats integral with shoes No. per track 35  
 Size 18" x 2 1/8"  
 Seat Upholstered  
 Total weight as tested (with operator) 20790 pounds.

FUEL AND OIL:

Fuel: Dieseline Weight per gallon 6.99  
 Oil: S.A.E. Viscosity No. 40 The oil was drained  
 Total oil to motor 4.360 gallons once - at the end of  
 Total drained from motor 4.062 gallons the test.  
 Total time motor was operated 48 hours

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REPAIRS AND ADJUSTMENTS

No repairs or adjustments.

REMARKS

All results shown on page 1 of this report were determined from observed data and without allowances, additions, or deductions. Tests B and F were made with the fuel pumps set to deliver 56 drawbar horsepower maximum in second gear, under standard conditions. These figures were used in determining the ratings recommended by the A.S.A.E. and S.A.E. tractor rating codes. Tests C, D, E, G and H were made with the same setting.

Observed maximum horsepower (tests B & F) Drawbar 52.99 Belt 61.04

Sea level (calculated) maximum horsepower Drawbar 56.28 Belt 63.12  
(Based on 60° F. and 29.92" Hg.)

Highest permissible horsepower ratings Drawbar 42.21 Belt 53.65  
(As recommended by A.S.A.E. and S.A.E.  
codes)

The 100% maximum belt and drawbar tests were not included in reports issued from 1928 to 1934 inclusive, except in those cases where the 100% maximum setting was used throughout the complete test.

We, the undersigned, certify that the above is a true and correct report of official tractor test No. 240

Carlton L. Zink  
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Engineer-in-charge

E. E. Brackett  
\_\_\_\_\_

C. W. Smith  
\_\_\_\_\_

E. B. Lewis  
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